DOCUMENT RESUME

ED 321 131 CE 055 359

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|---|---|
| TITLE | Competency Based Curricula. Missouri LINC Module. |
| INSTITUTION | Missouri Univ., Columbia. Coll. of Education. |
| PUB DATE | 87 |
| NOTE | 11p.; For related documents, see CE 055 354-365, CE 055 369-374, and CE 055 382-387. |
| AVAILABLE FROM | Missouri LINC, University of Missouri, 401 East Stewart Road, Columbia, MO 65211 (free). |
| PUB TYPE | Guides - Classroom Use - Guides (For Teachers) (052) |
| EDRS PRICE | MF01/PC01 Plus Postage. |
| DESCRIPTORS | Competence; *Competency Based Education; *Criterion Referenced Tests; *Curriculum Development; Curriculum Guides; Educational Resources; *Norm Referenced Tests; Program Development; Secondary Education; *Vocational Education |
| IDENTIFIERS | *Missouri; *Vocational Instructional Management System |

ABSTRACT

This module explains principles of competency-based education and assessment. Four competency-based curricula are outlined. The guide includes a list of definitions and uses a question-and-answer format to define competency-based education and to discuss competency-based assessment, criterion-referenced testing, and the Vocational Instructional Management System. Six references are included. (KC)

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TITLE: COMPETENCY BASED CURRICULA

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# COMPETENCY BASED CURRICULA

## Overview

With the emphasis on excellence in education and accountability, competency based education has received a lot of attention as an efficient method of achieving educational objectives. The Missouri Department of Elementary and Secondary Education has promoted competency based education for all instructional programs.

For teachers to be able to take a competency based approach to educating their students, they must have access to the competency based curricula that is available. They must use curriculum based assessment and criterion referenced tests in order to evaluate students' progress in mastering the competencies.

This module surveys four curricula that are competency based. Also it explains curriculum based assessment and criterion referenced testing, showing how they are an integral part of competency based education.

## Definitions/Terminology

Curriculum Based Assessment - evaluation of student progress that tests with items taken directly from student curriculum. Contrasts with standardized tests which usually are not based on a particular curriculum.

Criterion Referenced Test - a specific type of test that falls within the category of curriculum based assessment. It evaluates a student's level of performance or mastery of some specific instructional objectives. The student's performance is compared with some preset performance standard or criterion to see how near mastery the student is.

Norm Referenced Test - a test which compares a student's performance to the performance of a group to see where that student ranks. For example, if a student scores at the 75th percentile it means that the student has exceeded the scores of 75 percent of the group. Norm referenced tests cannot be used to evaluate progress toward mastery of specific objectives.

V-TECS - Vocational Technical Education Consortium of States. Members include 15 states and all four military branches. Develops catalogs of performance objectives and performance guides, curriculum guides and criterion referenced test items for job-related competencies.

ODAS - Occupational Data Analysis System. This computerized resource can provide information such as the skill requirements of jobs and the level of education and training required, the special needs accommodations required of different jobs, the skills included in various training programs, the approximate training time of new jobs, etc.

Frequently Asked Questions

Q. WHAT IS COMPETENCY BASED EDUCATION?

A. It is a structured method for organizing and delivering instruction. The method involves (1) the identification of specific competencies considered to be important for students to possess; (2) program objectives are specified in behavioral terms; (3) the criteria for assessing the students' competencies are specified and made available to the students; (4) learning activities are provided for each specified competency, ideally allowing for pupil variability and multiple entry points; and (5) students are held accountable for their performance (Davis, 1986).

Q. WHAT IS CURRICULUM BASED ASSESSMENT AND HOW DOES IT RELATE TO COMPETENCY BASED EDUCATION?

A. Curriculum based assessment is merely a new term for an old practice. It means taking a student's instructional curriculum and using it to determine the amount of achievement the student has made in that curriculum. The materials used to assess progress are drawn directly from the course of study. This contrasts with standardized testing to determine achievement because standardized tests are not usually based on a particular curriculum and therefore are not helpful in assessing a student's specific instructional needs. Instead, they compare a student's performance to that of a group.

Curriculum based assessment de-emphasizes ranking students and assigning grades, and focuses instead on testing for the purpose of accurately assigning students to levels of instruction where they can succeed and achieve (Hargis, 1987). The better the match between instruction and student ability, the better the student's achievement and behavior (Thompson, Gickling & Havertape, 1983).

Curriculum based assessment is needed to determine which tasks and learning activities are appropriate for individual students, because success is critical to learning. The level at which a student is able to begin and the rate of progress through a sequence of tasks must be tailored to each individual student. Because competency based education lays out a sequence of concrete tasks or competencies for students, it clearly calls for curriculum based assessment to determine where a student should

begin in the sequence as well as which competencies have been mastered once instruction has begun.

Q. WHAT IS CRITERION REFERENCED TESTING AND WHY IS IT USED IN COMPETENCY BASED EDUCATION?

A. The best way to explain criterion referenced testing is by contrasting it with norm referenced testing. A norm referenced test measures an individual in relation to a normative group; it shows how one student's performance compares to the performance of other students. A criterion referenced test measures individual growth toward a pre-determined performance standard; that is, it shows the change in a student's performance before and after instruction.

Since competency based education moves students along through a sequence of competencies that build upon one another, there is obviously a need to test for mastery of each competency. Criterion referenced testing is the method that tests for mastery. This is why Missouri's Excellence in Education Act requires all school districts to use criterion referenced tests to measure student progress on the competencies the state education department has identified as critical.

Criterion referenced testing has several other advantages. It encourages cooperation toward mastery rather than competition among students since scores are not used to compare students to one another. Also, it tells how much of the material to be learned has in fact been learned. Without this information teachers cannot adapt instruction and students cannot focus effort where needed (Baird, 1985).

On the following page is an illustration of the components in competency based education and criterion referenced testing. A sample objective from a food service training program is shown first, along with the criteria for demonstrating mastery of the objective. Next, a segment of the curriculum outline is provided plus terms to be taught. Finally, a criterion referenced test for the particular objective is given.

| | |
|---|---|
| OBJECTIVE | - YOU WILL BE ABLE TO: recognize the importance of portion control and the tools used for portioning. |
| CRITERIA | - SO WELL THAT: you can give three reasons why portion control is important, and match the appropriate tool to the goods to be portioned. |

| Curriculum Outline | Terms |
|---|---|
| I. Importance of portion control<br>A. Control of profit-loss<br>B. Food waste control through efficient planning<br>C. Customer satisfaction<br><br>II. Standard portions and tools used:<br>A. Types of menu items<br>1. breads, cereals<br>2. vegetables-cooked<br>3. salads<br>4. meats, egg, cheese<br>5. desserts<br>6. beverages | portion<br>standard portion<br>scoop size<br><br>tools:<br>ladles<br>scoops<br>portion scale<br>serving spoon<br>slotted spoon |

CRITERION REFERENCED TEST

I. State 3 reasons why portion control is important:

A.

B.

C.

II. Given the following foods, write in the most appropriate tool to use for portion control.

A. Mashed potatoes _____ E. Beef stew _____

B. Frozen yogurt _____ F. Salad dressing _____

C. Roast beef _____ G. Sliced ham _____

D. Buttered peas _____ H. Turkey gravy _____

Q. WHAT IS THE VOCATIONAL INSTRUCTIONAL MANAGEMENT SYSTEM (VIMS)?

A. The Vocational Instructional Management System is not a curriculum. Rather, it is a means of systematizing the educational process so that teaching objectives are defined and student progress is reported in terms of the objectives.

Because instruction is individualized and students work on competencies at their own pace in competency based education, a teacher's record keeping can become unwieldy without a management system. VIMS provides a practical framework that helps teachers and administrators manage the instructional process and evaluate their programs more efficiently.

The Vocational Instructional Management System involves the following six steps, four of which have already been developed and are available to vocational educators in Missouri:

1. Identify program goals - this must be done locally but should reflect the competencies as outlined by V-TECS or Missouri-developed task lists.

2. Prepare an occupational analysis - already developed and available to vocational educators.

3. Write performance objectives - already developed and available to vocational educators.

4. Select instructional delivery methods - to be done locally.

5. Develop competency measures or evaluations - already developed and available to vocational educators.

6. Develop competency profiles - already developed and available to vocational educators.

VIMS materials are available from:

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211
(314) 882-2733 or (800) 392-7217 (in Missouri only)

Q. WHAT COMPETENCY BASED CURRICULA IS AVAILABLE?

A. There are some good competency based instructional programs available and many more are being developed due to the excellence in education movement. It must be remembered though that while many curricula have competency based features, few are thoroughly competency based. That should be kept in mind while looking at the following four competency based curricula:

1. Life Centered Career Education: A Competency Based Approach - a curriculum developed by Donn Brolin of the University of Missouri-Columbia for teaching functional skills to handicapped students K-12.

2. Core Competencies and Key Skills for Missouri Schools - a list of all the essential competencies to be mastered in the main academic areas by all students K-12. Developed by Missouri Department of Elementary and Secondary Education.

3. ACCESS SKILLS - a curriculum developed by Missouri LINC for teaching prevocational skills to special needs secondary school students. A revision of the former Entry Level Skills Criteria.

4. Team Work - Robert A. Weisgerber and Patricia L. Blake's curriculum for teaching social skills to secondary school handicapped students.

Q. WHAT IS LIFE CENTERED CAREER EDUCATION: A COMPETENCY BASED APPROACH?

A. Life Centered Career Education is a competency based curriculum that is designed to teach daily living skills, personal-social skills and occupational skills to students with handicaps. It outlines 22 general competencies, some of which can be taught during the elementary years, others being more appropriate for junior or senior high school levels, making LCCE a K-12 curriculum.

Examples of some competencies within the first curriculum category, daily living skills, are Managing Family Finances, Buying and Preparing Food, Getting Around the Community.

The second category, personal-social skills, includes Communicating Adequately with Others, and Acquiring Self-Confidence.

The competencies listed in the third category, occupational guidance and preparation, include Exhibiting Appropriate Work Habits and Behaviors, and Knowing and Exploring Occupational Possibilities.

Each competency is further divided into subcompetencies, with performance objectives, teaching activities and rating forms to record progress toward mastery of the objectives. There are also two new activity books that have recently been published as companions to the curriculum and are filled with helpful teaching activities. Criterion referenced tests are currently being written to test for mastery of the objectives of the LCCE curriculum.

Life Centered Career Education: A Competency Based Approach and Life Centered Career Education Activity Books One and Two are available from:

The Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Q. WHAT IS CORE COMPETENCIES AND KEY SKILLS FOR MISSOURI SCHOOLS?

A. This is a list of all the academic competencies deemed crucial for mastery by the state of Missouri for all students in grades 2 through 10. These competencies have been identified for the following subject areas:

| | |
|---|---|
| Language Arts/Reading/English | Science |
| Mathematics | Social Studies/Civics |

Also provided in this document are some resources to supplement textbooks for each subject area at each level. Criterion referenced tests developed by the state education department will measure each student's progress in mastering the key skills from this list.

Core Competencies and Key Skills for Missouri Schools is available from administrators in all Missouri school districts and also from:

Missouri Testing and Evaluation Service
403 South 6th Street
Columbia, MO 65211
(314) 882-4694

Q. WHAT CHANGES HAVE BEEN MADE IN THE CURRICULUM FORMERLY KNOWN AS ENTRY LEVEL SKILLS CRITERIA?

A. First of all, the name has changed to ACCESS SKILLS. Second, the format has changed. No longer is the single 1000+ page manual available that covered all the various prevocational skills.

Instead, there will be a small instructional manual for each vocational area (agriculture, business and office, occupational home economics, etc.). Within each manual there is a list of the entry level skills needed to enroll in a particular vocational area, plus teaching activities and student worksheets. (Available Fall, 1988)

Another component of the ACCESS curriculum is ACCESS SKILLS: Employability and Study Skills Assessment and Curriculum Guide, which lists employability skills (such as arrive on time, cooperate with authority, follow directions) and study skills (such as read charts, use calculator, proofread). A useful feature of this manual is the inclusion of informal assessments for each employability or study skill which provide teachers with pretests to determine which of these skills a student already has. (Available Fall, 1987)

The entire ACCESS SKILLS curriculum or selected parts of it will

be available from:

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211
(314) 882-2883 or (800) 392-7217 (in Missouri only)

Q. WHAT IS THE TEAM WORK CURRICULUM?

A. This is a curriculum for teaching work-relevant social skills to students with handicaps. It is guided by the belief that personal and social skills are the key factors in whether or not a handicapped person finds and keeps a job.

The student materials are divided into three areas; they are listed below with examples of objectives from each:

| CURRICULUM AREAS | SAMPLE OBJECTIVES |
|---|---|
| Developing Students' Personal, Social and Job-Readiness Skills | Handling Your Feelings<br>Showing That You Are Motivated |
| Developing Students' Job-Finding and Job-Entry Skills | Presenting Yourself for an Interview<br>Getting to Work on Time |
| Maintaining and Improving Job Performance | Following Directions<br>Talking with Co-Workers |

Specific strategies are suggested for developing the requisite social skills. Rewards, role playing, use of outside speakers and relaxation therapy are some of the strategies.

While this curriculum is not written strictly in the behavioral language typical of competency based curricula, it does sequence the behaviors to be taught and provides a form for recording skills or objectives that have been mastered. Judgement about mastery of the skills is rather subjective on the part of the instructor, but that is understandable given the elusive nature of social skills acquisition.

A very helpful feature of the Team Work curriculum is the wealth of hypothetical situations presented which can be used either for role playing or class discussion.

Team Work consists of an Instructor's Guidebook, Student's Materials, and two pamphlets titled Implementation Guide and Employer's Guidebook. There is also a counselor's guide for use with clients in agencies. It is available from:

American Institutes for Research
Box 1113
Palo Alto, CA 94302

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